

GUIDED MATH:

Practical Strategies to Differentiate Your Math Instruction



**Presentation by
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Acknowledgments



Hugs and kisses go to my husband and two children for their continued support and encouragement with my professional endeavors. There have been countless hours that they have accompanied me at school after hours, during a holiday, or on weekends as I worked on presentation ideas. More importantly, it has been

through watching my own children's experiences that I have grown to become a better teacher. I am also grateful to Dover Area School District of Pennsylvania, its community, my colleagues and administrators, parents, and students who have supported my efforts and given me inspiration along the way. Additionally, I would like to thank Shippensburg University and its staff for providing invaluable professional development activities and opportunities.

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What is Guided Math?

Guided Math Components	Balanced Reading Components

A spiral notebook with a silver-colored metal binding on the left side. The notebook is open, showing a blank page on the right and a page with text on the left. The text is written in a bold, black, sans-serif font. The page number '2' is at the bottom center.

Pretesting

HOW TO BEGIN:

ADMINISTRATION:

CORRECTING PRETEST:

COMPILING INFORMATION:

USING INFORMATION TO DRIVE INSTRUCTION:

RETURNING THE PRETEST:

Components of Guided Math

WHOLE GROUP INSTRUCTION

SMALL GROUP/INDIVIDUAL INSTRUCTION

INDEPENDENT PRACTICE

CENTER ACTIVITIES

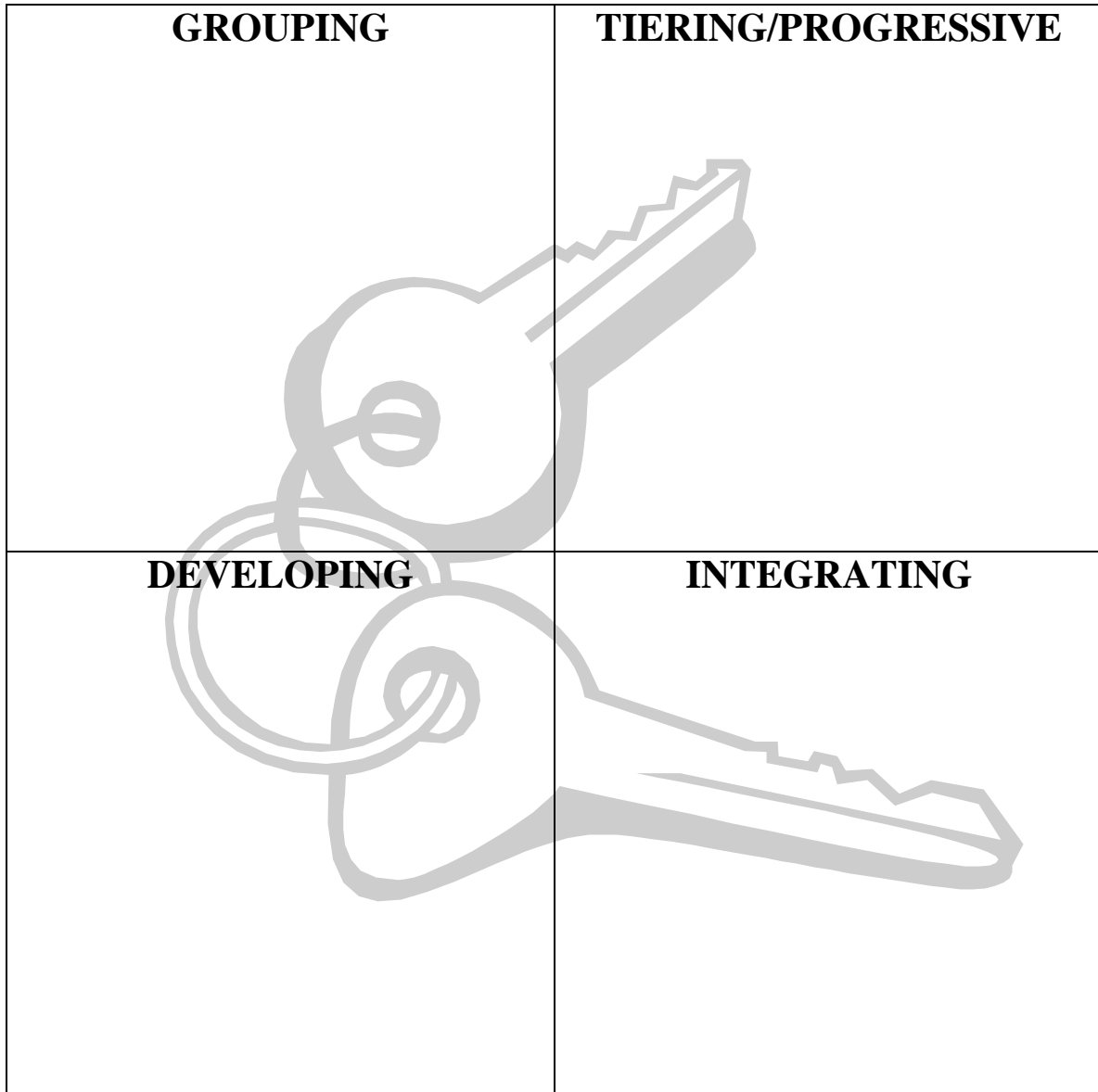
PROBLEM OF THE DAY (Optional)

BASIC FACT REVIEW (Optional)

Scheduling

Time	Activity	Setting	Teacher's Role	Students' Role
8:45-9:05	Guided Practice	Whole group	Teach a minilesson on a particular concept.	Participate in activity.
9:05-9:45	Independent Practice	individualized	Provide a worksheet or workbook page relating to the concept being taught.	Complete worksheet or workbook page
	Guided math instruction	Small group or individualized instruction	Work with ability groups based upon known or unknown content	Meet with teacher when called.
	Center activities	Color groups or individualized	Periodically scan classroom to make sure students are on task and appropriately interacting with centers.	Quietly complete centers according to color group assignment.
9:45-9:50	Wrap-up session	Whole group	Review problem of the day answer and collect any worksheets/workbook pages.	Participate in problem of the day solution. Turn in any completed sheets requested by teacher.

Math Learning Centers: Keys to Success



Management

	Blue Group	Green Group	Red Group	Yellow Group
Day 1	Computer	Game	Calendar	Telling Time
Day 2	Telling Time	Computer	Game	Calendar
Day 3	Calendar	Telling Time	Computer	Game
Day 4	Game	Calendar	Telling Time	Computer



GUIDED MATH CENTER ROTATION

Blue
Group

Green
Group

Red
Group

Yellow
Group

(Day 1)

Computer

Game

Calendar

Telling
Time



Blue
Group

Green
Group

Red
Group

Yellow
Group

(Day 2)

Telling
Time

Computer

Game

Calendar



Blue
Group

Green
Group

Red
Group

Yellow
Group

(Day 3)

Calendar

Telling
Time

Computer

Game



Blue
Group

Green
Group

Red
Group

Yellow
Group

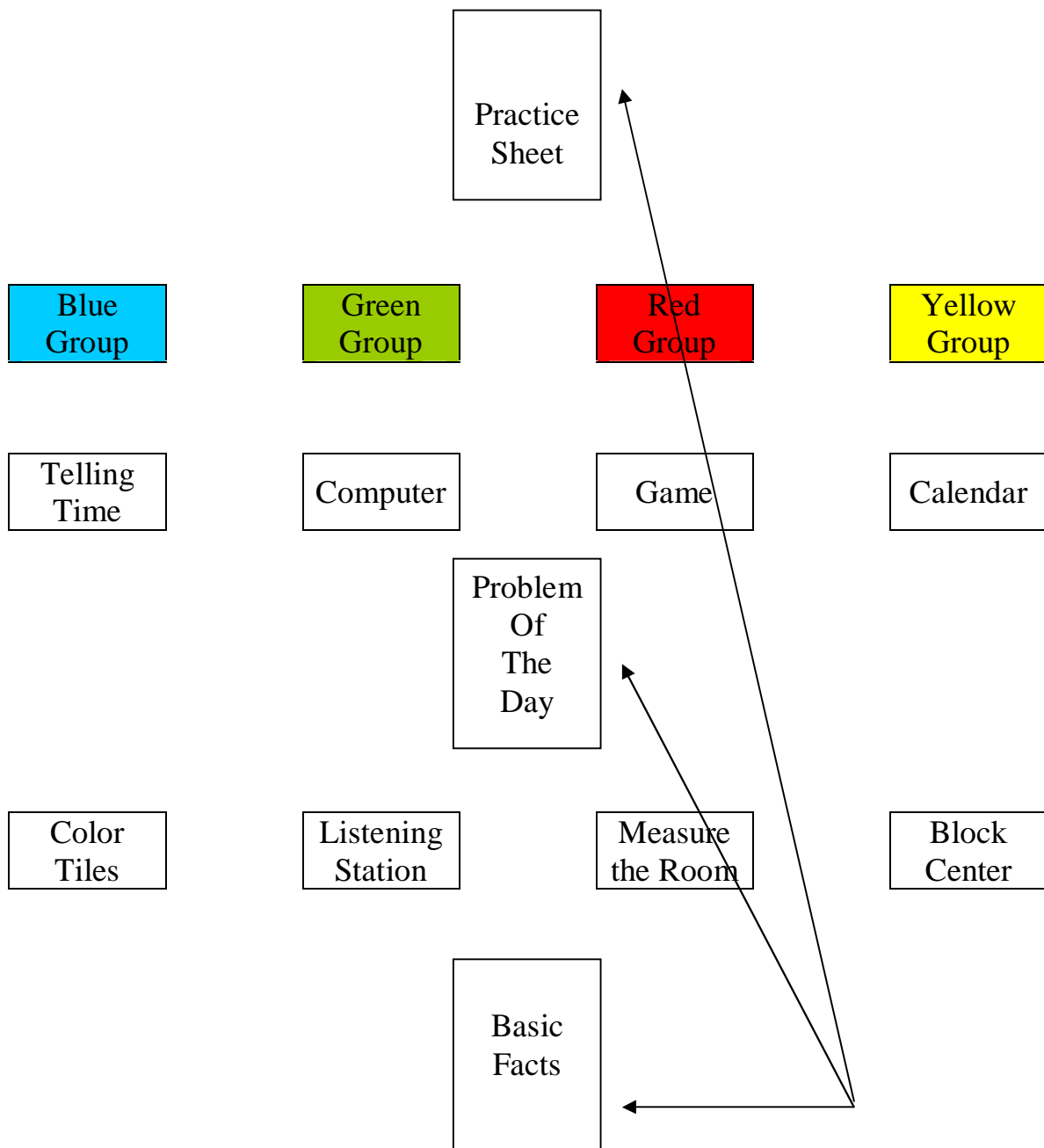
(Day 4)

Game

Calendar

Telling
Time

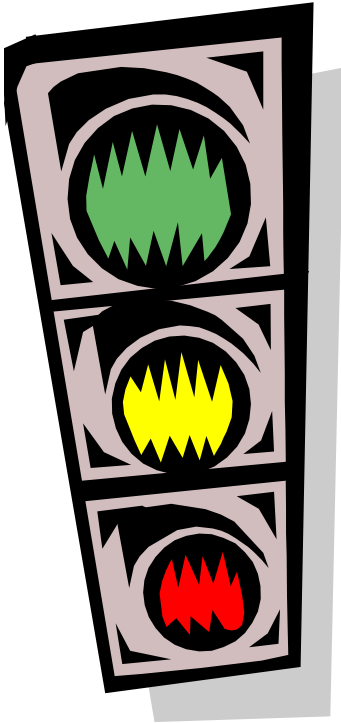
Computer



These are activities that all children do. We refer to them as “Must Do” activities. These are done at the children’s own desk or seat area. To determine what activities the students do, one reads the display from top to bottom.



Managing Students



RED LIGHT/GREEN LIGHT

UNDERSTANDING THE TASKS

COLLECTING/CORRECTING WORK

IT'S A PRIVILEGE

Collecting Materials



Fish shaped crackers
Dominoes
Beads
Construction paper
Elmer's 3-D Markers
Plastic Zip bags
Cassette players
Headphones
Cassette tapes
Magnetic Tape
Kitchen timer
Dice
Spinner
Skittles
Metal cookie sheets (from dollar store)

Buttons
Noodles
Board games
Fruit rings cereal
Telephones
Beach balls
Plastic measuring devices
Rice
Sunflower seeds
Ink pads
Coin rubber stamps
Apple rubber stamp
3x5 index cards
Plastic cups
Magnetic numbers

Differentiated Centers – Number and Operations

Activity:	Challenged	Average	Gifted
beach ball Extensions:			
hundreds chart Extensions:			
number wheels Extensions:			

Name _____ Date _____

BEACH BALL FUN

First Toss:

Second Toss:

Third Toss:



Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

PICTURE CARD # 1

I can grow tall. I can grow small. What am I?

Color these spaces on your hundred chart to find out!

GREEN:

5	6	14	15	16	17
24	25	26	27	33	34
35	36	37	38	43	44
45	46	47	48	52	53
54	55	56	57	58	59
62	63	64	65	66	67
68	69				

BROWN:

75	76	85	86	95	96
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PICTURE CARD # 1

I can grow tall. I can grow small. What am I?

Color these spaces on your hundred chart to find out!

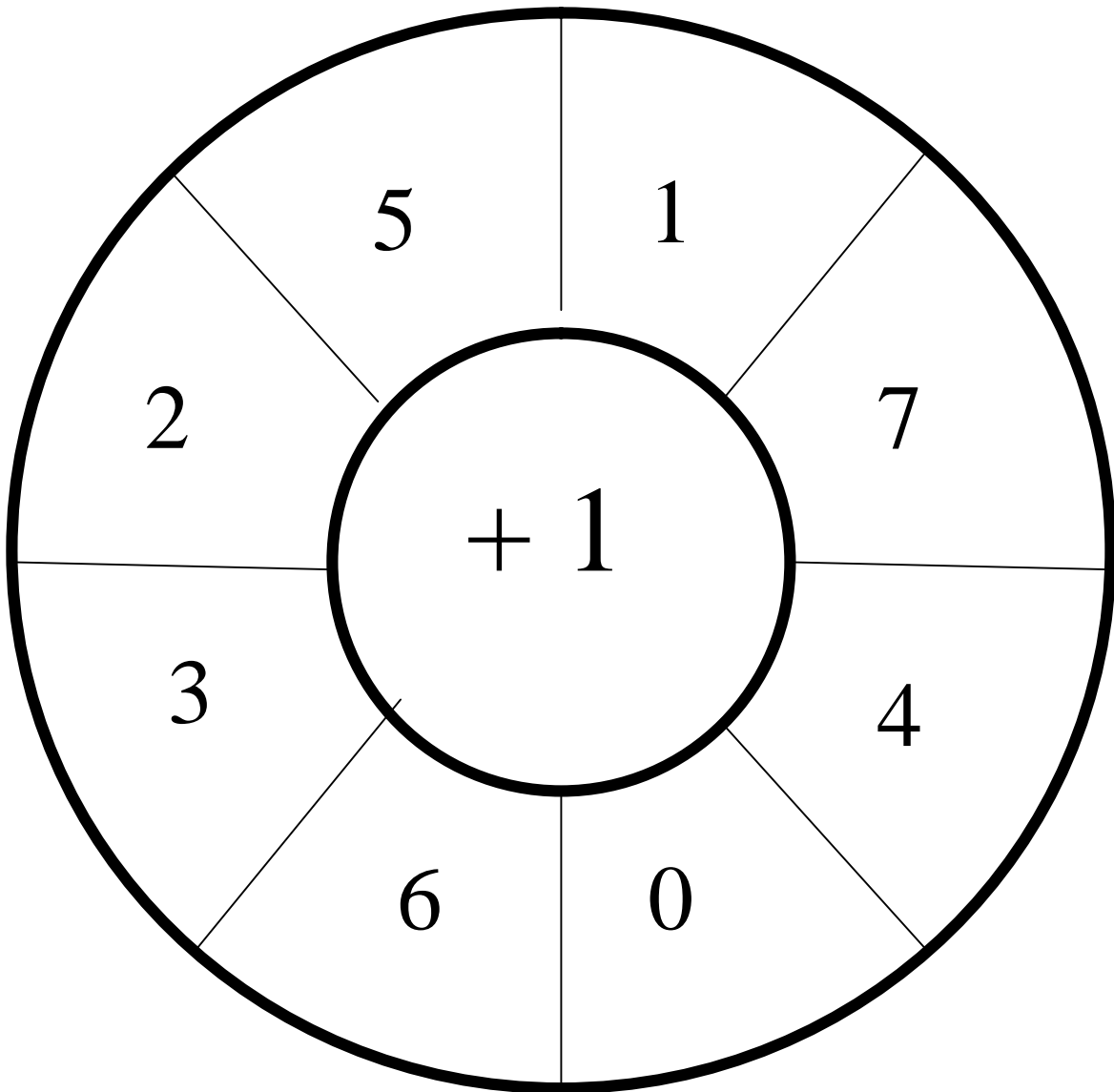
GREEN:

$7 - 2$	$3 + 3$	$7 + 7$	$20 - 5$	$8 + 8$	$18 - 1$
$12 + 12$	$30 - 5$	$13 + 13$	$28 - 1$	$11 + 22$	$36 - 2$
$20 + 15$	$18 + 18$	$40 - 3$	$36 + 2$	$45 - 2$	$22 + 22$
$50 - 5$	$40 + 6$	$49 - 2$	$24 + 24$	$55 - 3$	$50 + 3$
$60 - 6$	$20 + 35$	$57 - 1$	$52 + 5$	$61 - 3$	$57 + 2$
$65 - 3$	$3 + 60$	$32 + 32$	$70 - 5$	$40 + 26$	$69 - 2$
$18 + 50$	$80 - 11$				

BROWN:

$50 + 25$	$80 - 4$	$45 + 40$	$90 - 4$	$90 + 5$	$100 - 4$
-----------	----------	-----------	----------	----------	-----------

Number Rings





Name _____ Date _____

TELEPHONE FUN!

My telephone number is ____ - ____ - ____

When I add up all the digits the total is _____ .

Here is a vocabulary word I know: _____

I can add the value of the letters by looking on a telephone.

When I add up the value of the letters the total is _____ .

I can write a sentence using my vocabulary word.

Allyssa W.

Extinct
3984628

$$398 + 246 + 2 + 8 = 43$$

(+4)

40

Check
again "

Dinosaurs are extinct,

Name _____ Date _____

Bowling Fun!



On my first throw, I knocked down the following pins:

On my second throw, I knocked down these pins:

The total of turn one was _____

On my first throw, I knocked down the following pins:

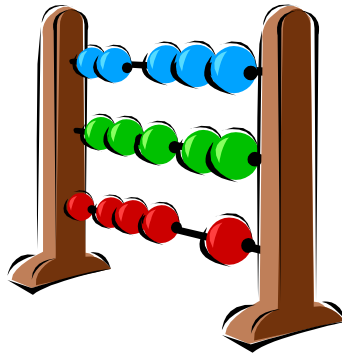
On my second throw, I knocked down these pins:

The total of my second turn was _____

On my first throw, I knocked down the following pins:

On my second throw, I knocked down these pins:

The total of my third turn was _____



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Differentiated Centers – Algebra

Activity:	Challenged	Average	Gifted
pattern beads			
Snap It!			
dominoes			
windows			

Name _____ Date _____

PATTERNS!

Directions: *Continue each number pattern. Then describe the pattern.*

1. **2 , 4 , 6 , 8** , _____ , _____ , _____

The pattern is _____ .

2. **0 , 1 , 2** , _____ , **4 , 5** , _____ , _____

The pattern is _____ .

3. **22 , 24 , 26 , 28** , _____ , _____ , _____

The pattern is _____ .

4. **30** , _____ , **50 , 60** , _____ , **80** , _____

The pattern is _____ .

5. **30 , 35 , 40** , _____ , **50** , _____ , _____

The pattern is _____ .

6. **120 , 130 , 140** , _____ , _____ , _____

The pattern is _____ .

7. **3 , 5 , 7** , _____ , **11** , _____ , _____

The pattern is _____ .

8. **41 , 43** , _____ , _____ , _____ , **51**

The pattern is _____ .

Name _____ Date _____

FRUIT LOOP PATTERNS

*Use **two** different colored fruit loops to make a pattern. Use crayons to show your pattern.*

*Now try making a different pattern using **three** different colors. Draw your pattern using crayons.*

Make a different pattern than above. Glue the cereal to show your pattern.

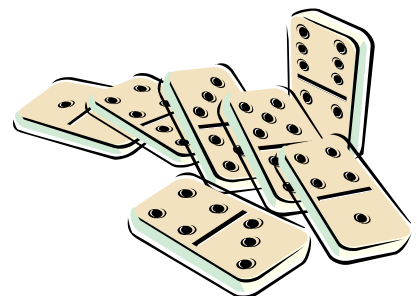
Name _____ Date _____

DOMINO DELIGHT

First Pick:

Second Pick:

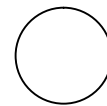
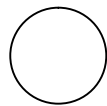
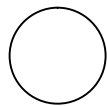
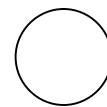
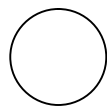
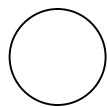
Third Pick:



These two sides

fold in.

Once folded,
put the
corresponding
number on
the outside
of one of the
flaps. This
window would
have the
numeral 6 on
the outside.





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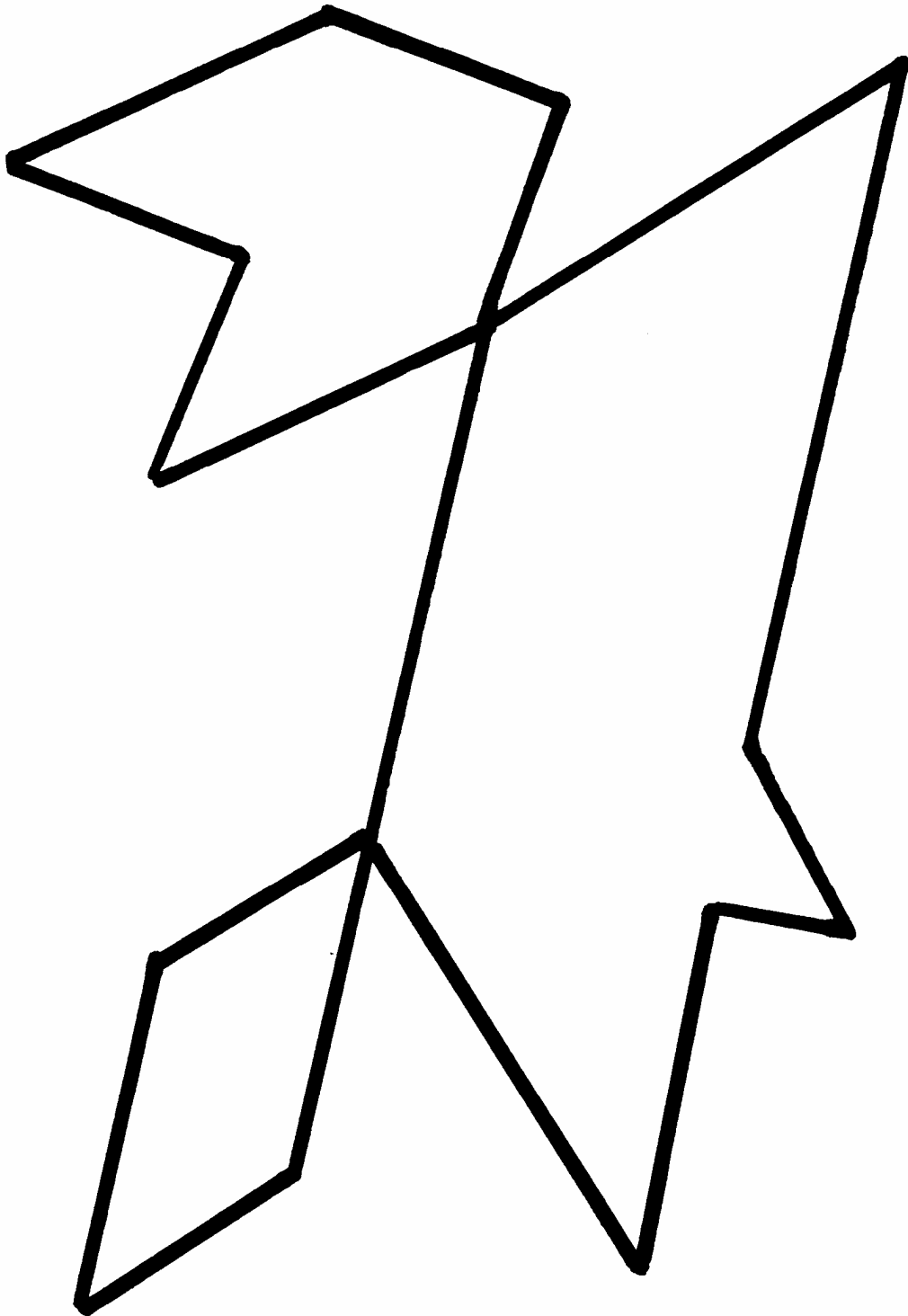
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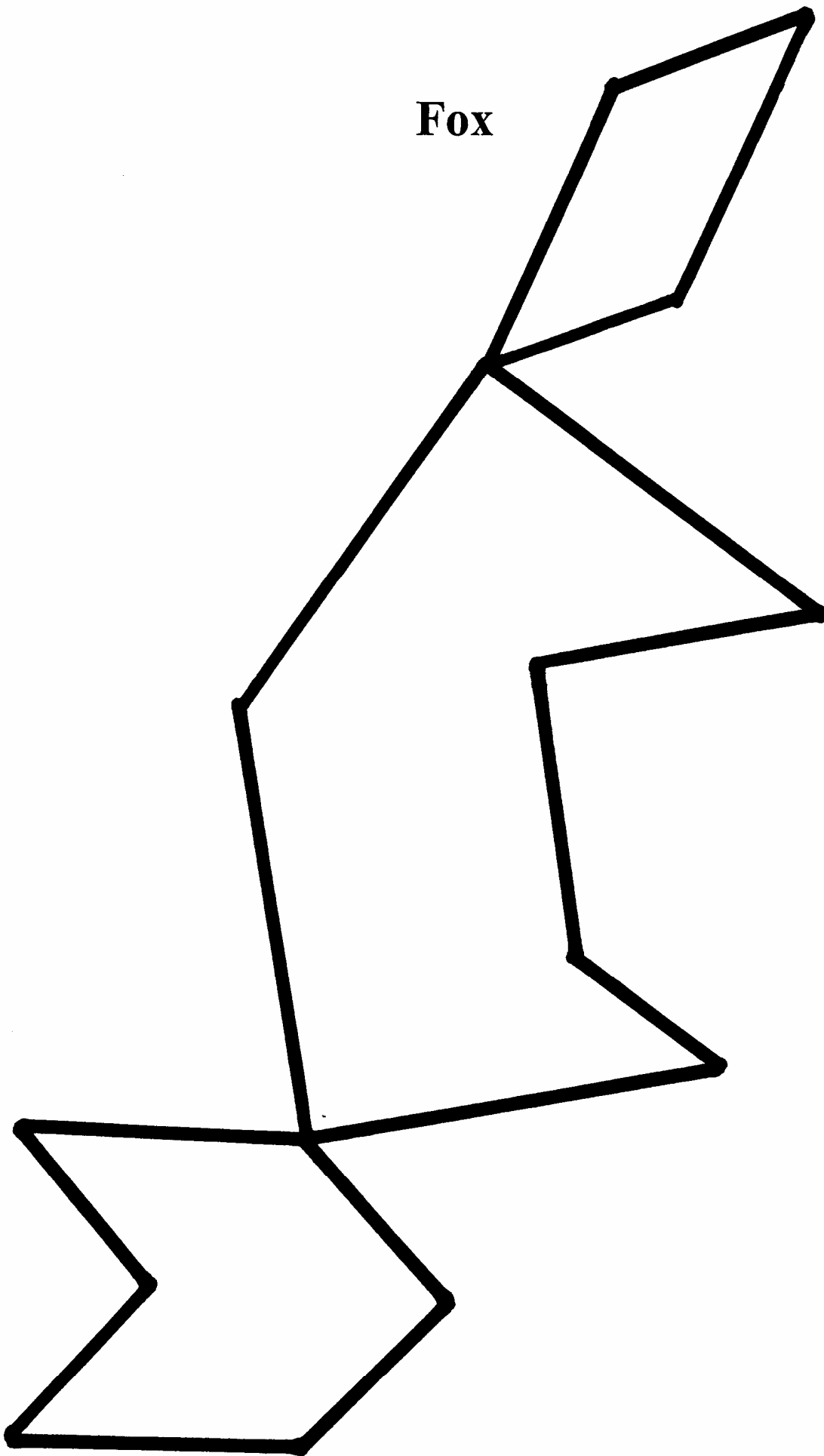
Differentiated Centers – Geometry

Activity:	Challenged	Average	Gifted
any art project			
symmetry trees			
traced tangrams			
traced pattern blocks			

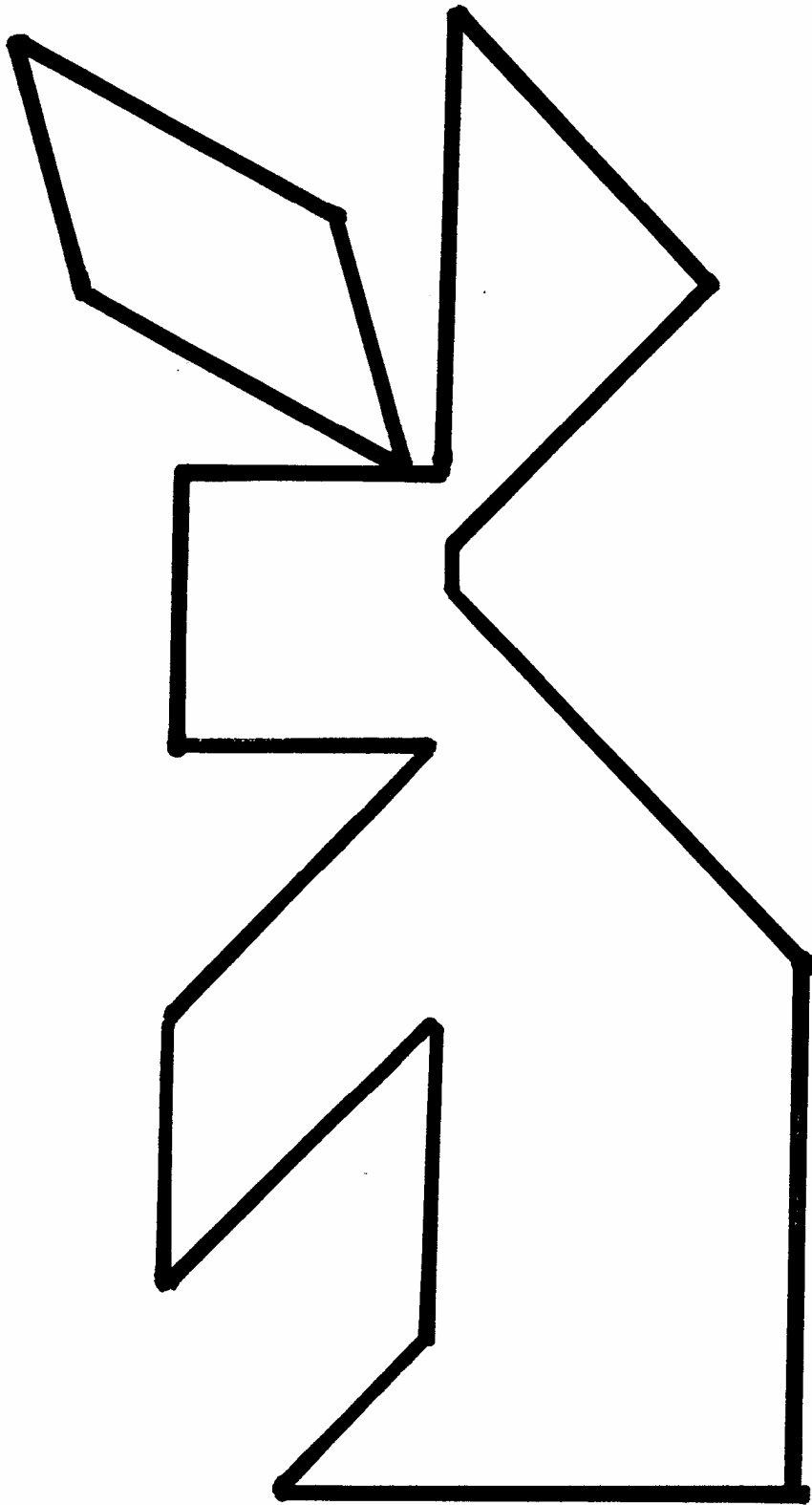
Fox



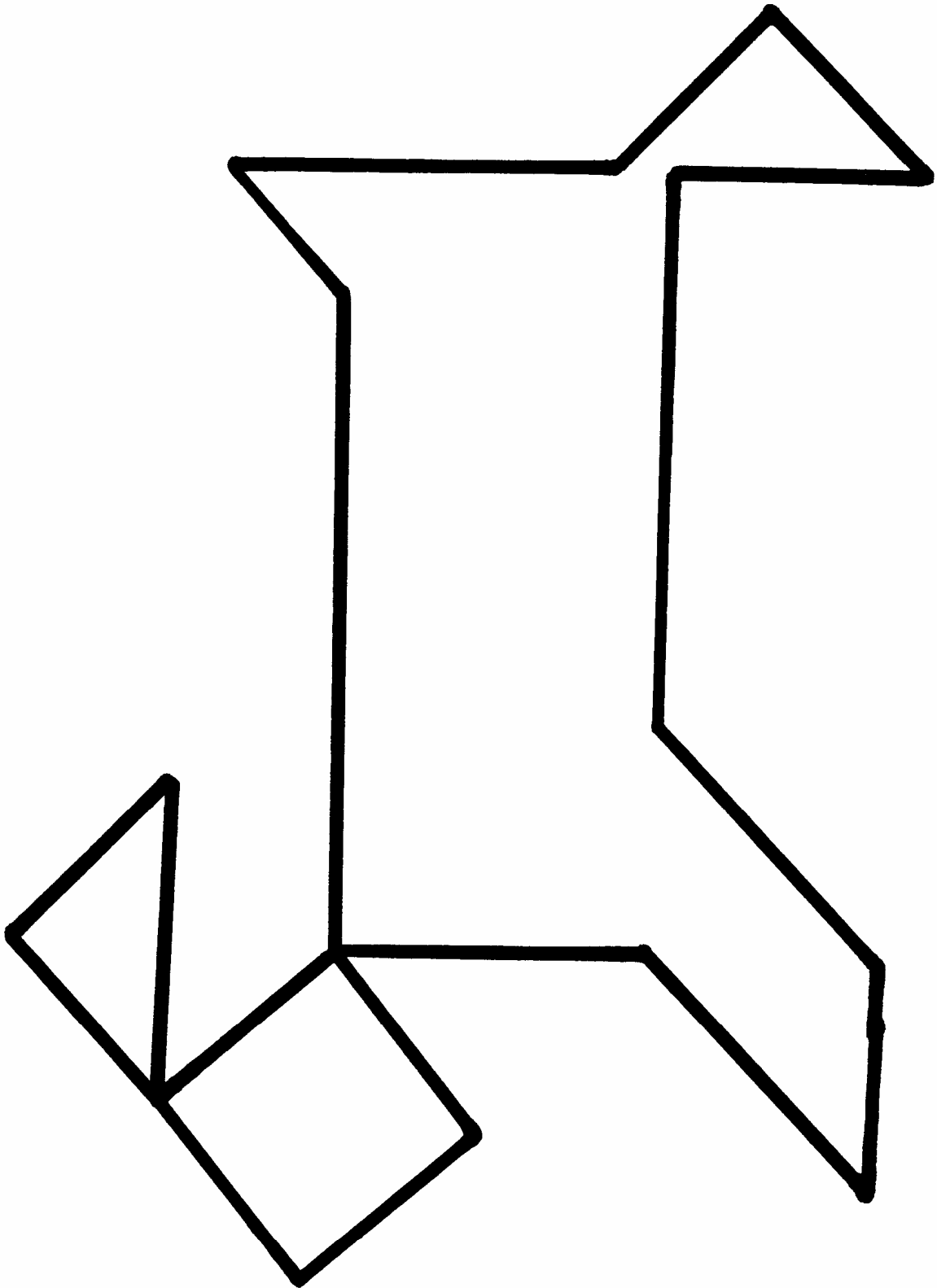
Fox



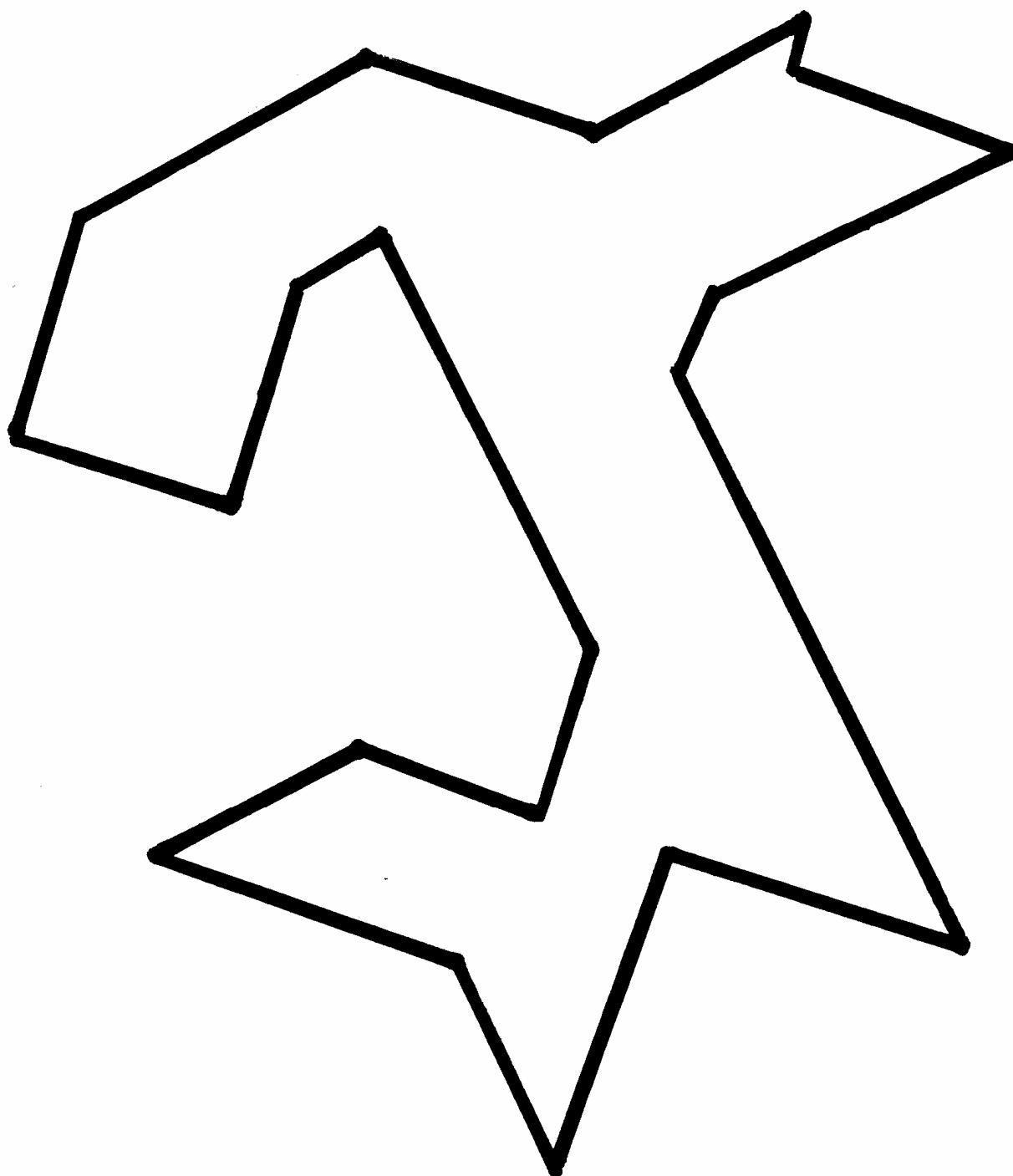
Rabbit



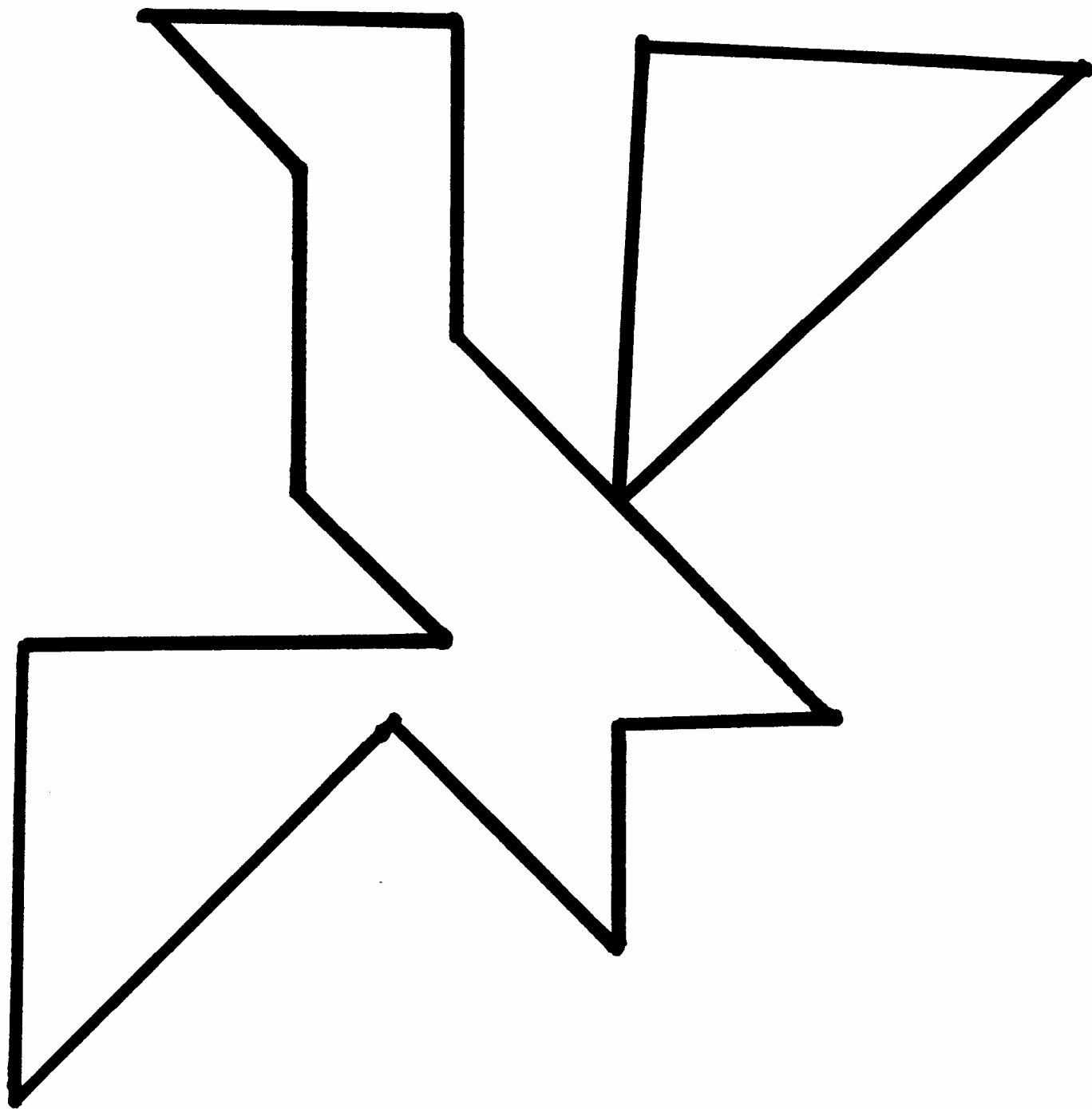
Dog



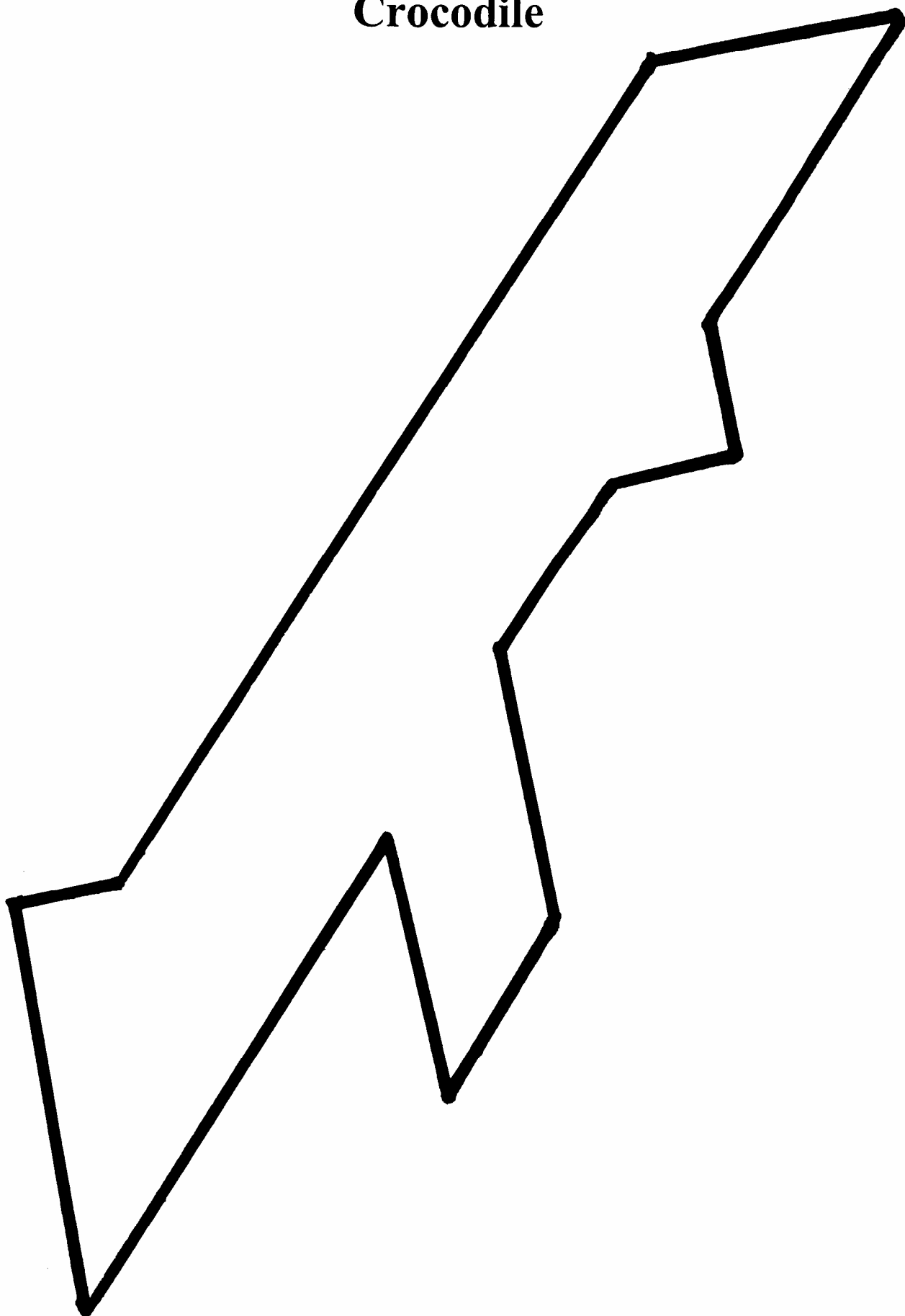
Squirrel



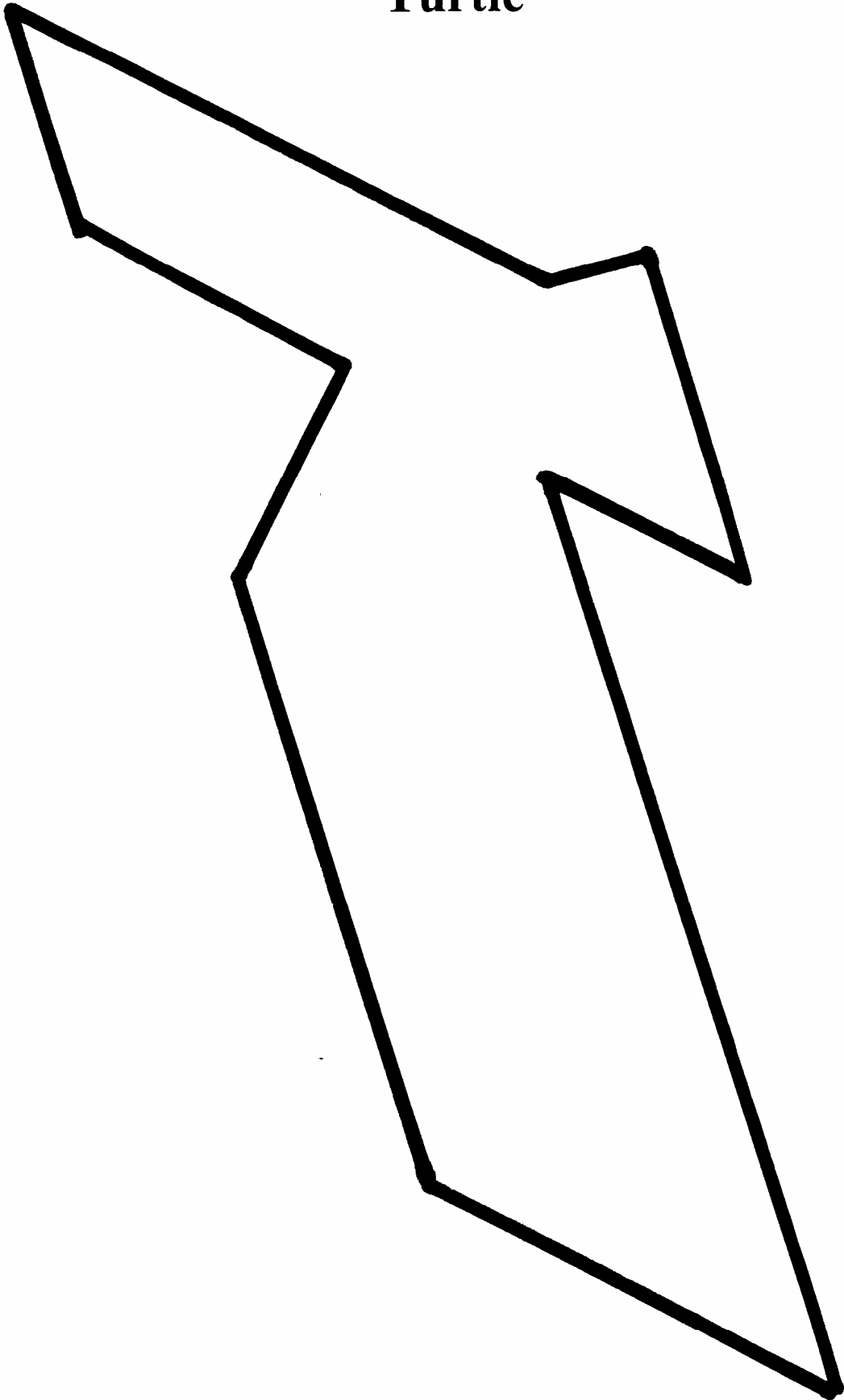
Hawk



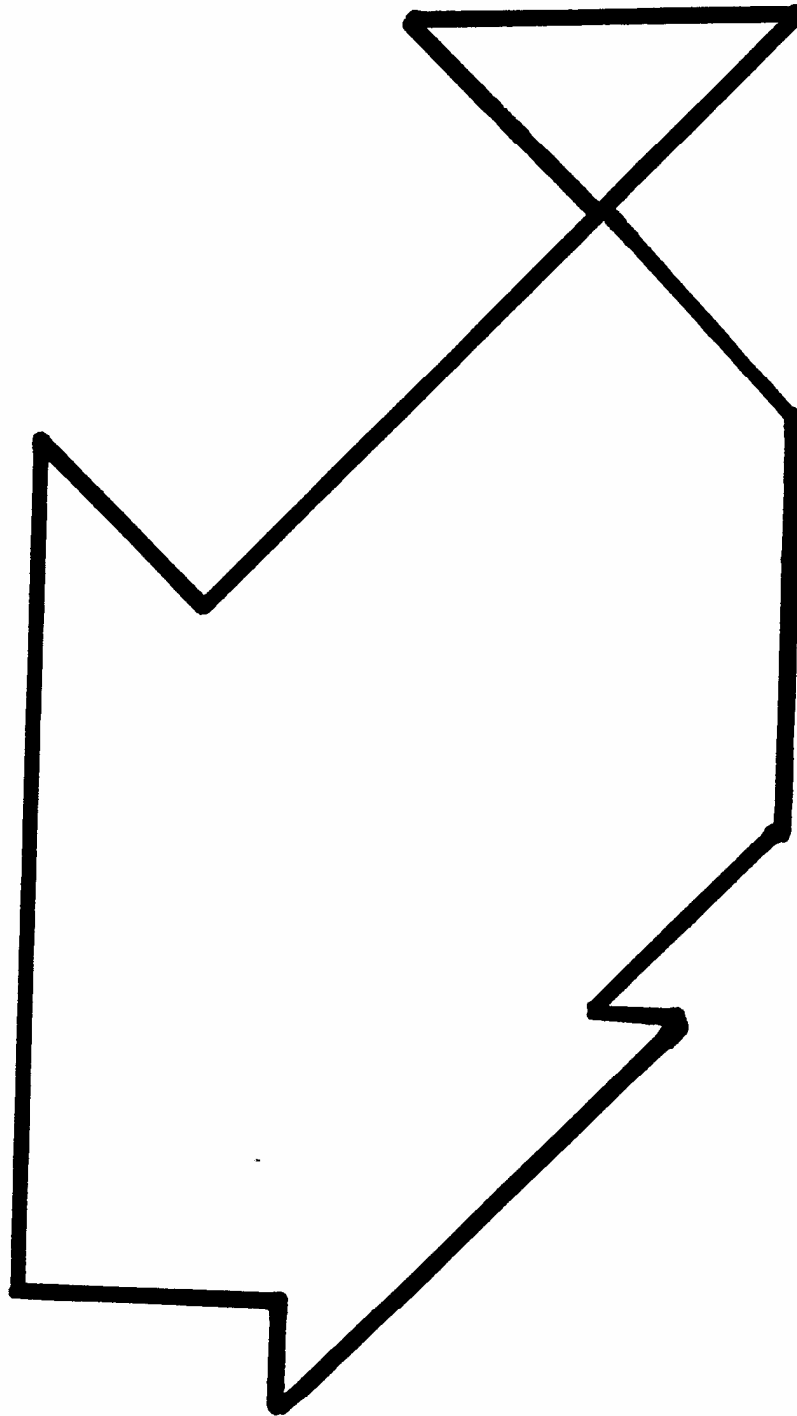
Crocodile



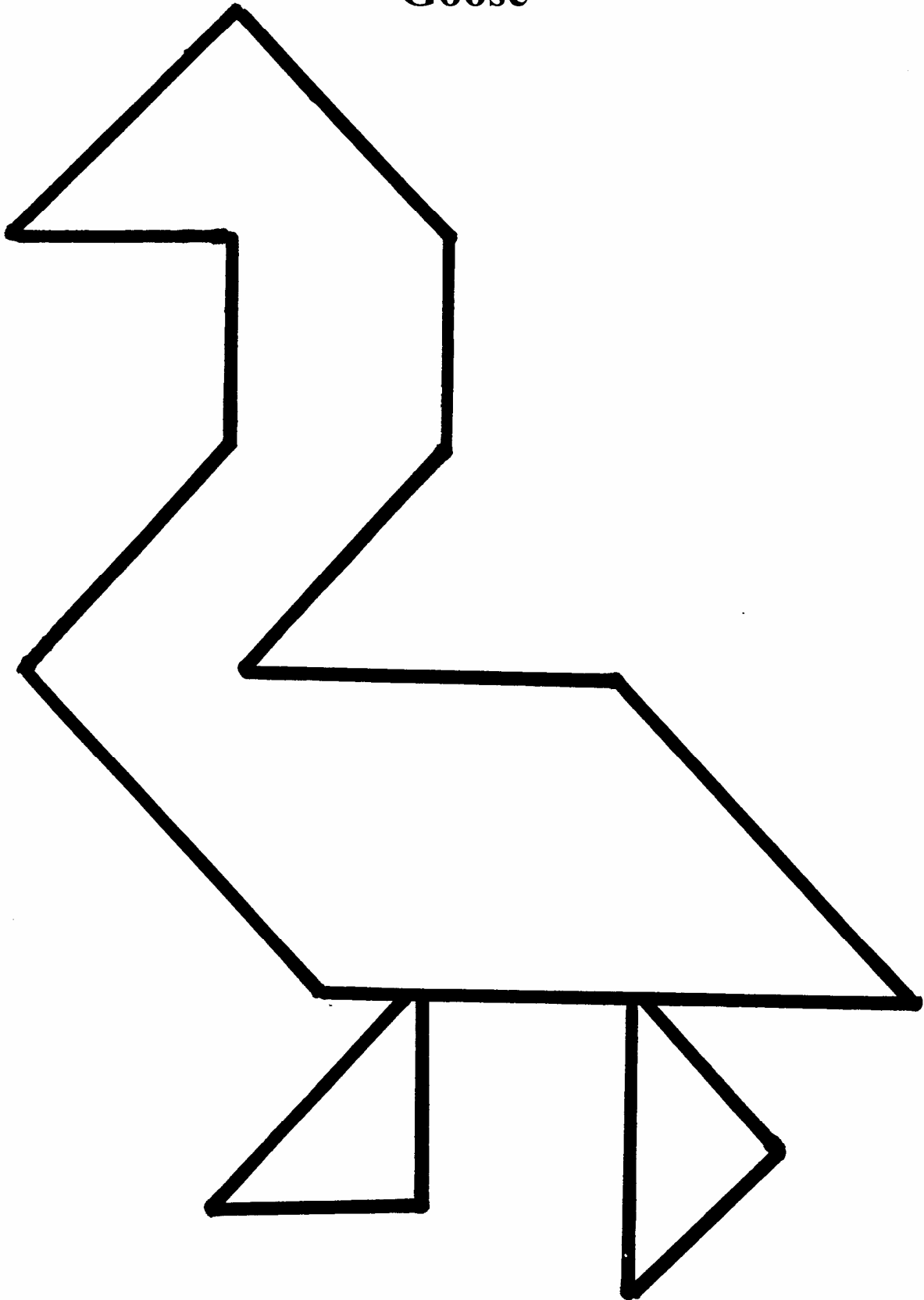
Turtle



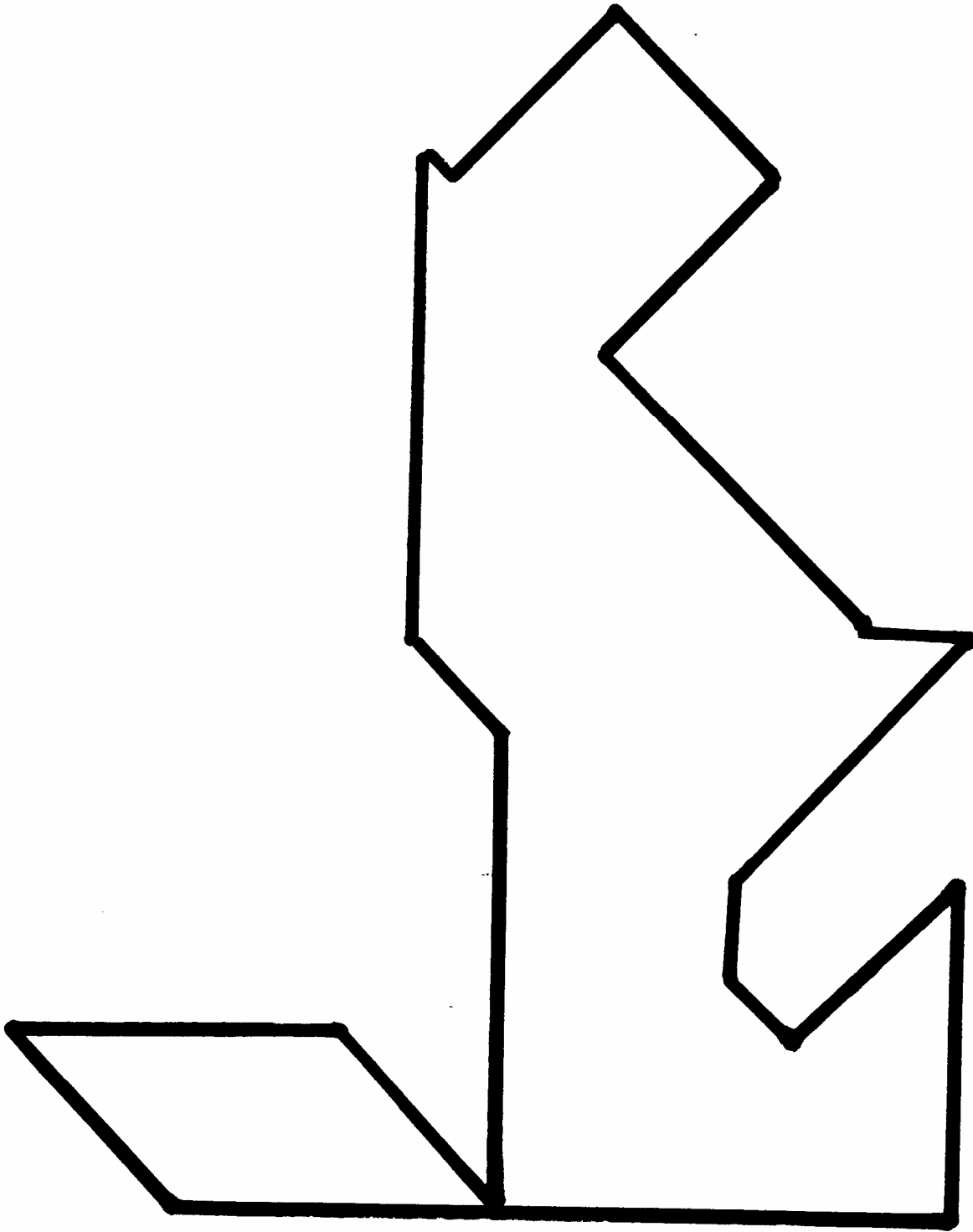
Goldfish



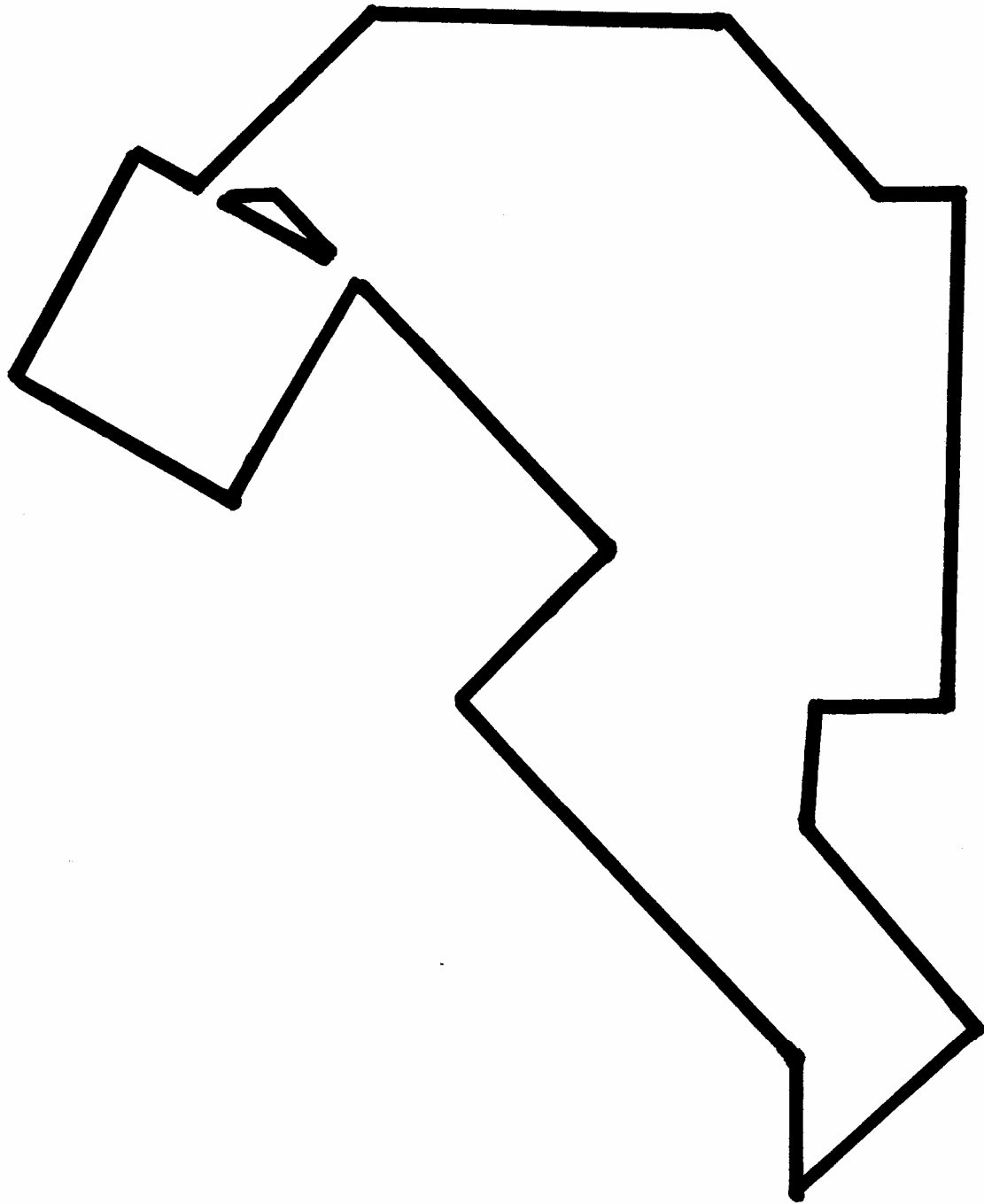
Goose



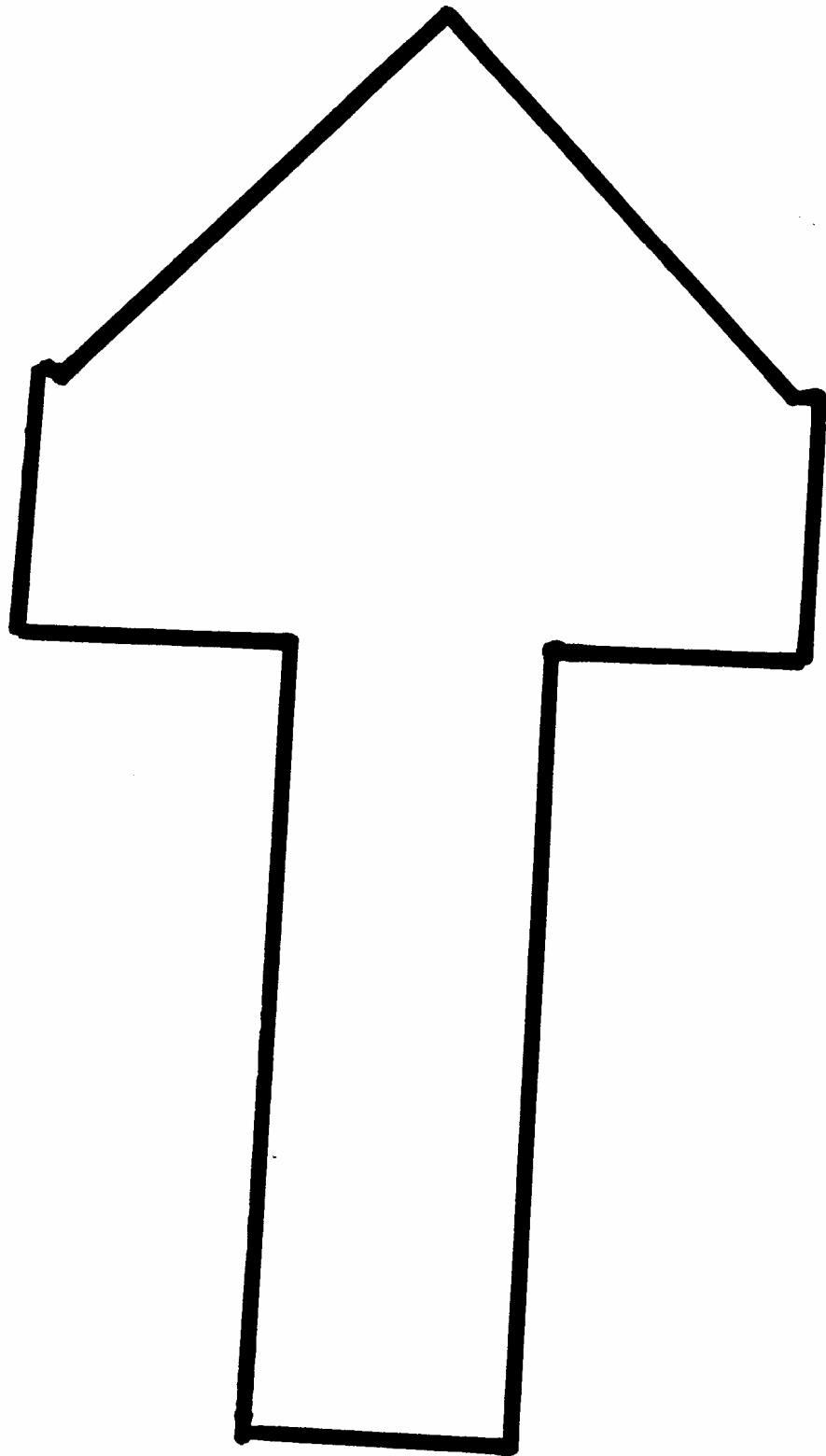
Lion



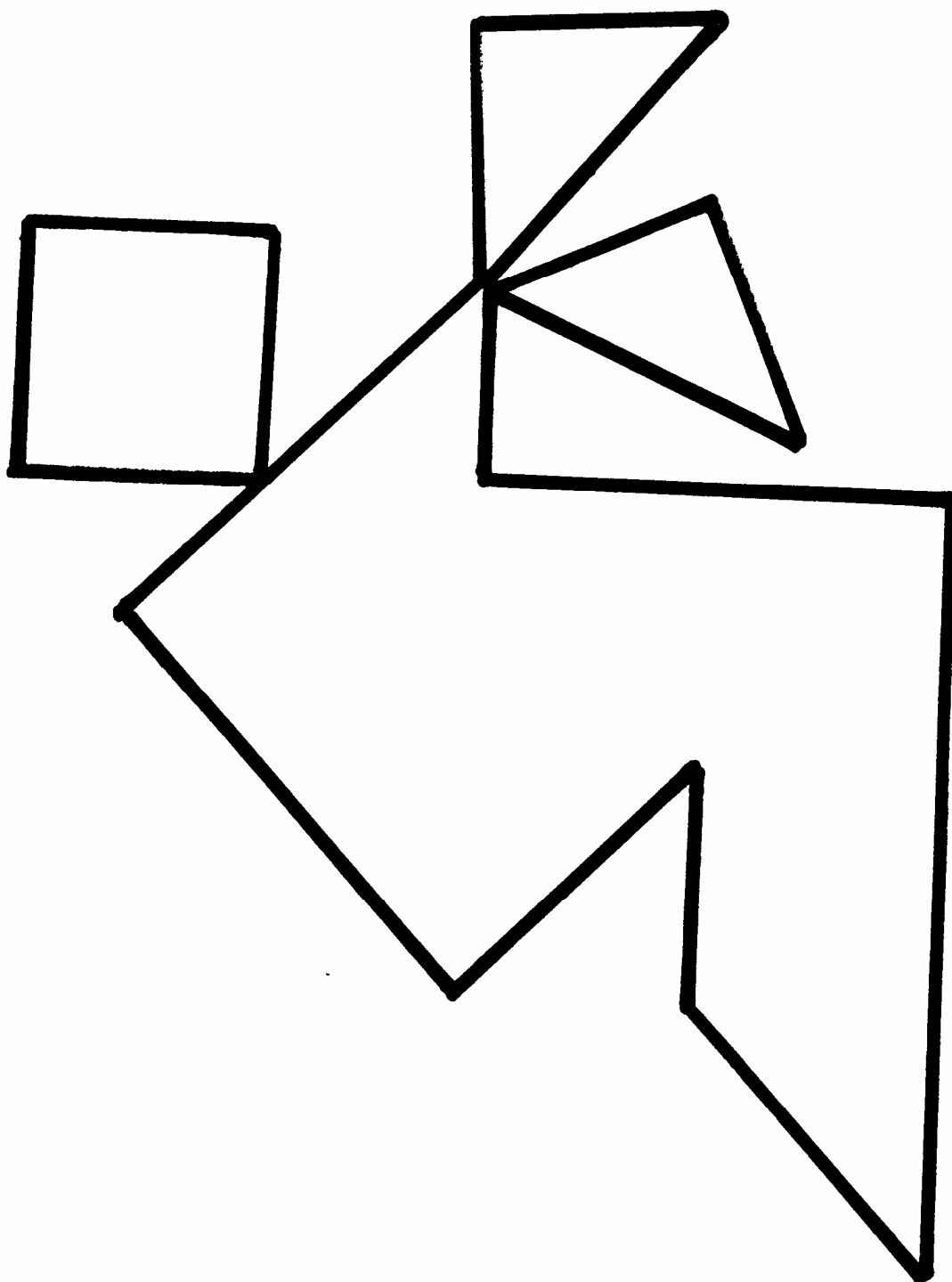
Grandfather



Tree



Little Soo

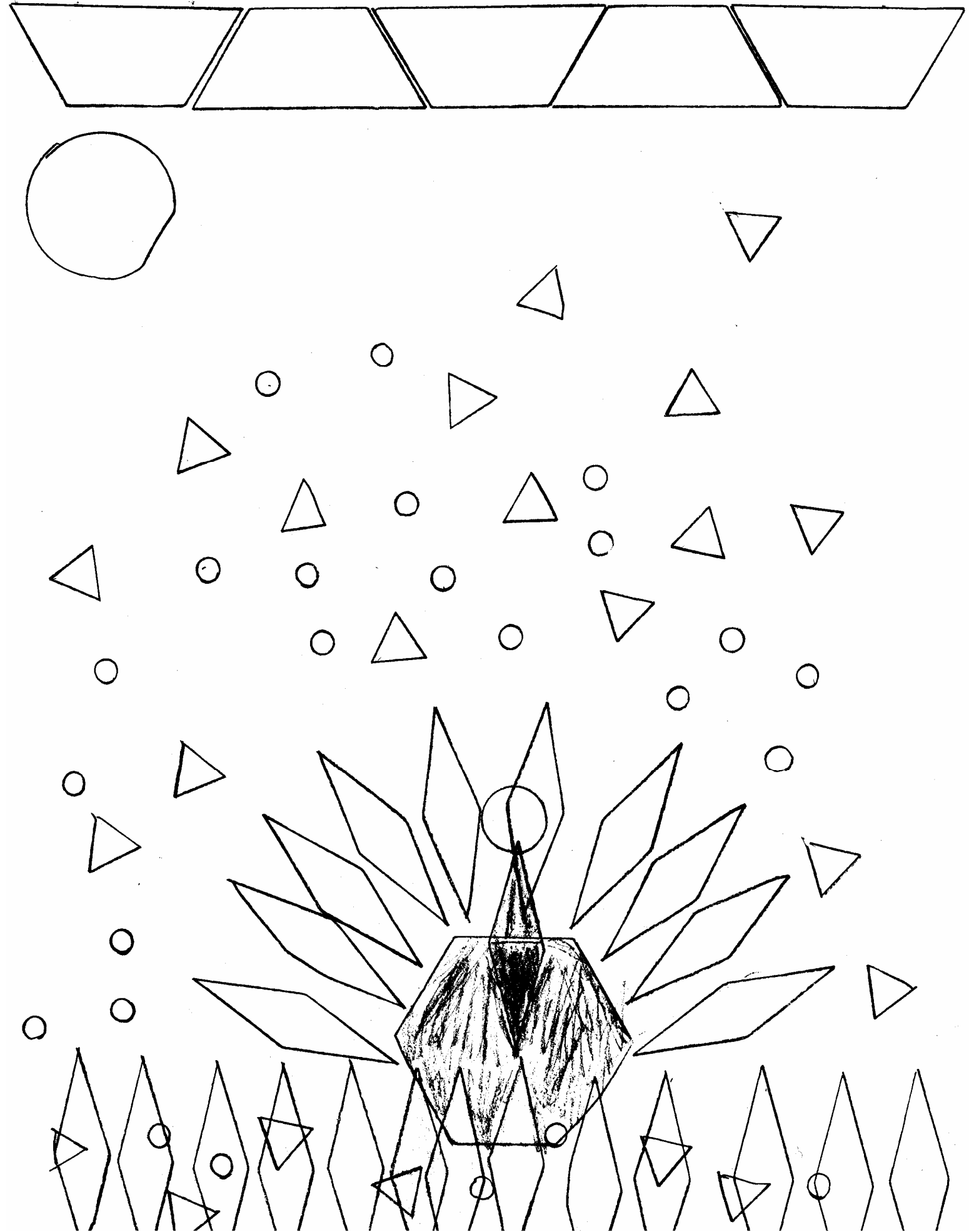


HOLIDAY GEOMETRY PROJECT

	YES	NO
I can make Tangram shapes on a Geoboard. (2.9.2.C.2)		
I can select and name the seven Tangram shapes. (2.9.2.A)		
I can use the shapes to make a new shape. (2.9.2.B,I)		
I know the difference between open and closed figures. (2.9.2.H)		

Here is the way I made my Holiday Project: (1.1.2.F and 1.5.2.B,C,D)

Tell how you feel about your project. Be sure to tell why you feel the way you do. (1.4.2.C)



Name _____ Date _____

LOOK CLOSELY!

Directions: *Write down the objects under the name of the shape they have.*

Circle

1. _____
2. _____
3. _____

Square

1. _____
2. _____
3. _____

Rectangle

1. _____
2. _____
3. _____

Triangle

1. _____
2. _____

Sphere

1. _____
2. _____
3. _____

Cube

1. _____
2. _____
3. _____

Cylinder

1. _____
2. _____
3. _____

Cone

1. _____
2. _____

Name _____ Date _____

LOOK CLOSELY!

Directions: *Find one object for each shape listed below. Draw a picture of the item below the shape name.*

Circle

Sphere

Square

Cube

Rectangle

Cylinder

Triangle

Cone

Name _____ Date _____

LOOK CLOSELY!

Directions: *Find three objects for the shape named by your teacher.
Draw a picture of the three items below. Label each.*



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Any Zaner-Bloser Plane Geometry Book. Contact 1-800-421-3018

Differentiated Centers – Measurement

Activity:	Challenged	Average	Gifted
measure the room			
rice center			
equal arm balance			

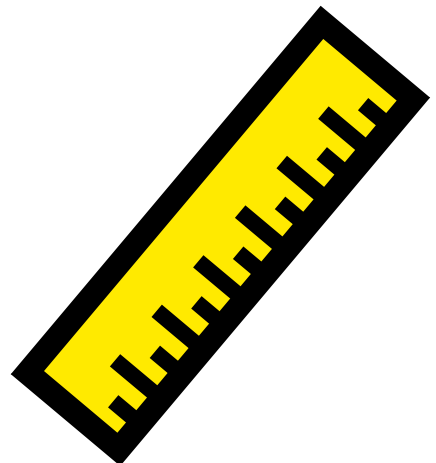
Name _____ Date _____

MEASURE THE ROOM

First Measurement:

Second Measurement:

Third Measurement:





Name _____ Date _____

Cups, Pints, Quarts, $\frac{1}{2}$ Gallons

How many cups of rice can you get into a pint? _____

How many cups of rice can you get into a quart? _____

Therefore, how many pints are in one quart? _____

How many quarts do you think are in a $\frac{1}{2}$ gallon? _____

Therefore, how many pints are in a $\frac{1}{2}$ gallon? _____

Draw a picture:

2 c. = 1 pt. 2 pts. = 1 qt. 2 qts. = $\frac{1}{2}$ gal.



Equal Arm Balance

IDEAS:



Name _____ Date _____

BALANCING ACT



_____ is greater than _____

_____ is less than _____

_____ is equal to _____



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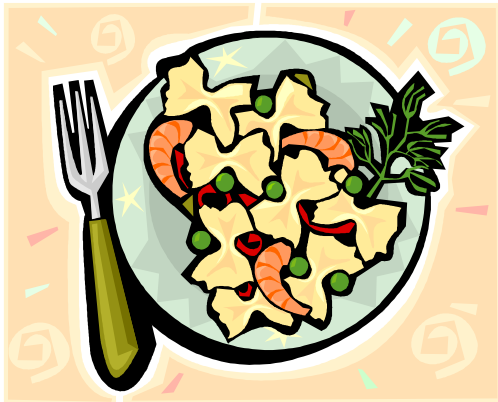
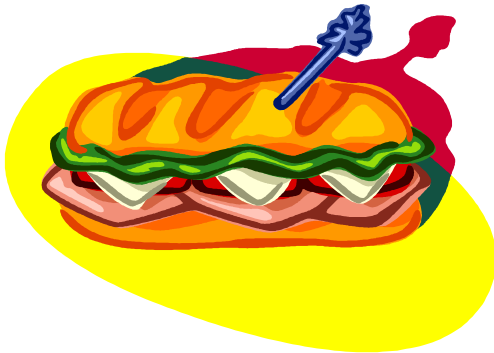
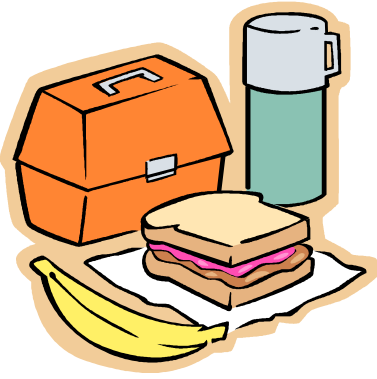
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Differentiated Centers – Data Analysis

Activity:	Challenged	Average	Gifted
lunch chart			
classroom surveys			
morning meeting information			
“Great Graph Art”			

Lunch Analysis



MORNING MEETING CHART IDEAS:

Gather, organize and display data using a bar graph

Name _____ Date _____

Put each classmate's name in the block that shows his/her favorite color. Then color.

My Classmates' Favorite Colors

red	yellow	green	blue

What does this graph show?

Name _____ Date _____

My Classmates' Favorite Colors

An adult should read each of the questions below to the student while reviewing necessary terminology. Assign one point for each correct response.

	YES	NO	COMMENT	POINTS
I surveyed everyone in my class.				
I displayed the data by coloring from the bottom up.				
I could tell an adult which color was chosen the most.				
I could tell an adult which color was chosen the least.				
I could tell an adult how many people in my class chose the color green.				
I could tell or show an adult the title of the graph.				
I could tell an adult how many people I surveyed all together.				
I wrote something about my graph on the bottom of my sheet.				

Total Points /8

Gather and display data using tallies
Graph the possible results of an experiment

Name _____ Date _____

Fishing Fun!

Use tally marks to show the data gathered.

Blue	
Green	
Pink	
Red	
Yellow	

What does this chart show?

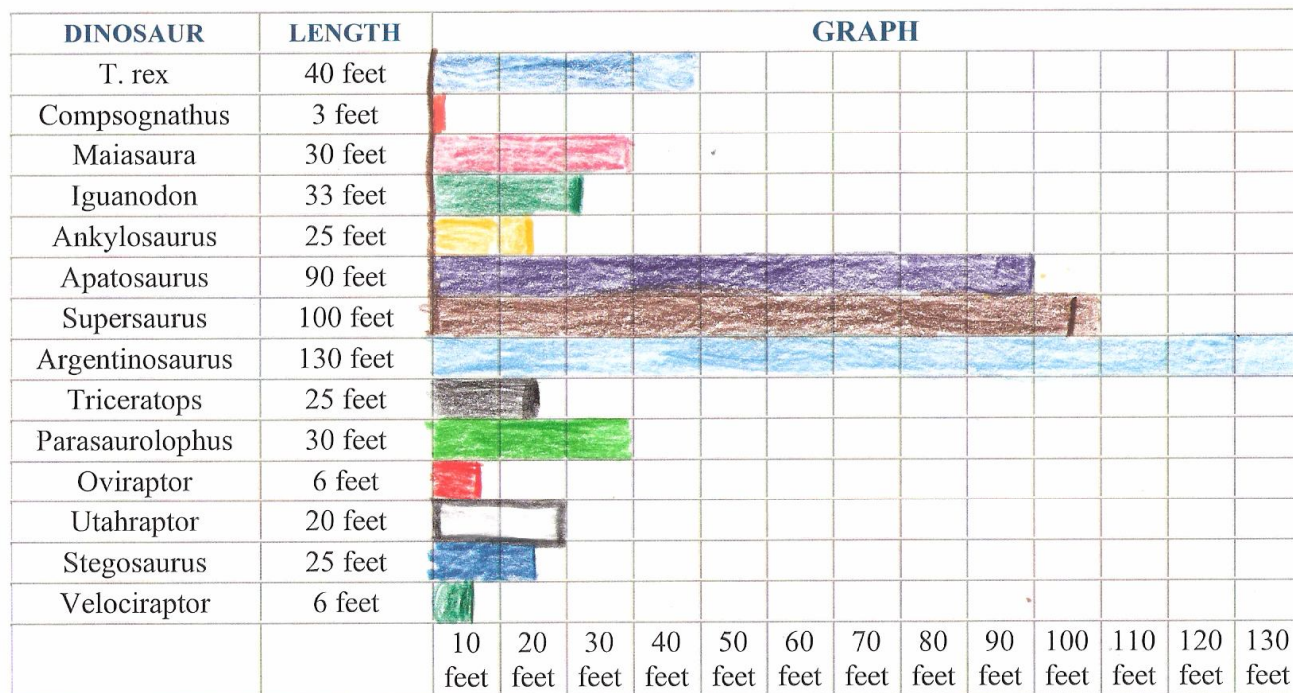
DINOSAUR GRAPH

Name Kayla

Date 1/31/07



Using the following data (information), graph the sizes of the dinosaurs. Then answer the questions at the bottom of the page.



- Which dinosaur is the longest? Argentinosaurus
- Which dinosaur is the shortest? Compsognathus



SCHOLASTIC NEWS GRAPHS

Name _____

Date _____

Let's Go Camping!

Directions: Your family is going on a weekend camping trip. Color the correct face.




	sure to happen	won't happen	may happen
1. You will see a bear.			
2. It will rain.			
3. A pink skunk will visit you.			
4. It will become night.			
5. You will see a rainbow.			
6. You will eat.			
7. It'll be sunny all weekend.			
8. You will see people.			
9. You'll go home on Tuesday.			
10. You will see Abe Lincoln.			

Name

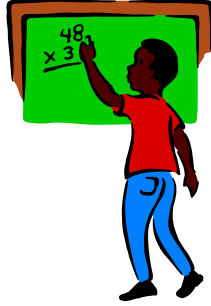
Date

My Fossil Observations

Here is a picture of the fossil I chose:



Here is something I noticed:



Bibliography – Data Analysis and Probability

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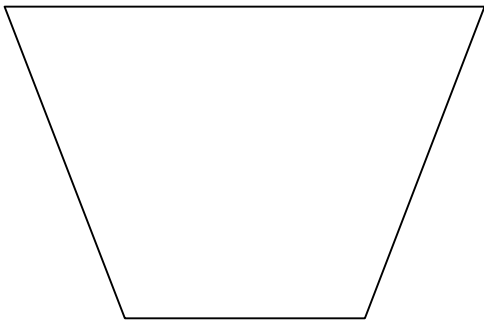
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Differentiated Centers – Process

Activity:	Challenged	Average	Gifted
problem of the day			
attribute blocks			
estimating			
Making numbers			

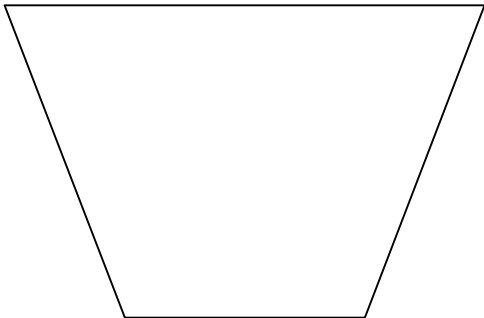
Name _____ Date _____

Using My Noodle!!



**The number of
noodles I
estimate to be
in my cup is**

_____ .



**The number of
noodles in my
cup is**

_____ .

The difference is _____.

Name _____ Date _____

Making Numbers

1 2 3

The lowest number I can make is _____.

The greatest number I can make is _____.

A two-digit number greater than 13 is _____.

A two-digit number with a sum of three is _____.

A two-digit number with a sum of five is _____.

MYSTERY NUMBER CLUES

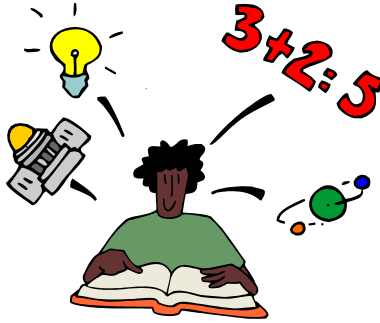
I have three digits.

I am greater than 200 but less than 300.

My tens digit is less than my ones digit.

What number am I?

THE MYSTERY NUMBER IS ____ ____ ____



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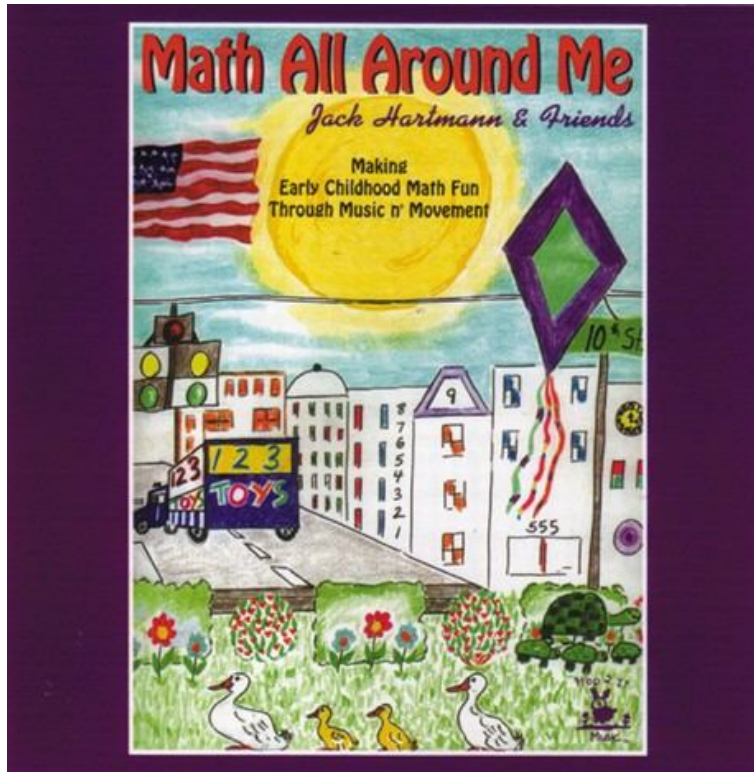
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Ages 3 to 8
Math

Educational Focus:

Basic math skills for early childhood

Number skills

Counting 1 to 10

Counting up & down

Counting forward & backward

Basic addition and subtraction

Counting on

Comparing

Birthdays

Today, yesterday & tomorrow

Patterning

Shapes

Spatial awareness

Counting by 2s & 5s

Math in the environment

35 Independent Math Learning Centers

Standards-Based Centers That Help Students Practice Skills in Number Sense, Computation, Problem Solving, and More—While You Teach Small Groups

by Deborah Allen Wirth



Key Skills Include:

- * One-to-One Correspondence
- * Place Value
- * Money
- * Patterns
- * Shapes
- * Symmetry
- * Measurement

CLOCK PARTNERS

12:00

9:00



3:00

6:00

Find someone who . . .

- | | |
|--------------|--|
| 12:00 | has a similar teaching/educational assignment |
| 3:00 | has a different teaching/educational assignment |
| 6:00 | you do not know |
| 9:00 | has something in common with you |

